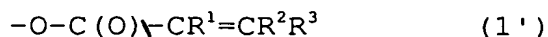


CLAIMS

1. A vinyl polymer
 having at least one group of the general formula (1) at
 5 a molecular chain terminus;

$$-Z-R-CR^1=CR^2R^3 \quad (1)$$
 wherein Z represents an oxygen atom, a sulfur atom, a group of
 the formula NR' , R' represents a univalent hydrocarbon group
 containing 1 to 20 carbon atoms, or a bivalent organic group
 10 containing 1 to 20 carbon atoms; R represents a carbonyl group,
 a direct bond or a bivalent organic group containing 1 to 20
 carbon atoms; R^1 and R^2 are the same or different and each
 represents a hydrogen atom or a univalent organic group
 containing 1 to 20 carbon atoms; R^3 represents a univalent
 15 organic group containing 1 to 20 carbon atoms.
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2. The polymer according to Claim 1
 wherein the organic group in the general formula (1)
 comprises a carbon atom, a hydrogen atom and 0 to 2 oxygen atoms.
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3. The polymer according to Claim 2
 wherein the organic group in the general formula (1) is
 a hydrocarbon group.
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- 25 4. The polymer according to Claim 1, 2 or 3
 wherein R^3 in the general formula (1) is a substituted
 or unsubstituted aryl group.
- 30 5. The polymer according to Claim 1, 2 or 3
 wherein R^3 in the general formula (1) is a substituted
 or unsubstituted vinyl group.
- 35 6. The polymer according to any of Claims 1 to 5
 wherein the general formula (1) is represented by the
 general formula (1');;

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wherein R^1 and R^2 are the same or different and each represents a hydrogen atom or a univalent organic group containing 1 to 20 carbon atoms; R^3 represents a univalent organic group containing 1 to 20 carbon atoms.

7. The polymer according to any of Claims 1 to 6 wherein R^1 and R^2 in the general formula (1) or (1') is the same or different and each represents a hydrogen atom or a methyl group.

8. The polymer according to any of Claims 1 to 7 wherein the main chain is a (meth)acrylic polymer.

9. The polymer according to Claim 8 wherein the main chain is an acrylate polymer.

10. The polymer according to any of Claims 1 to 7 wherein the main chain is a styrenic polymer.

11. The polymer according to any of Claims 1 to 10 wherein the main chain is produced by living radical polymerization.

12. The polymer according to Claim 11 wherein the main chain is produced by atom transfer radical polymerization.

13. The polymer according to Claim 12 wherein the metal complex catalyst for said atom transfer radical polymerization is a complex of copper, nickel, ruthenium or iron.

14. The polymer according to Claim 13 wherein the metal complex is a complex of copper.

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15. The polymer according to any of Claims 1 to 10 wherein the main chain is produced by the polymerization using a chain transfer agent.

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16. The polymer according to any of Claims 1 to 15 which is obtainable by substituting a compound of the general formula (2) for a terminal halogen group of a vinyl polymer having a halogen atom at a molecular chain terminus;

10 $M^+OC(O)CR^1=CR^2R^3$ (2)

wherein R^1 and R^2 are the same or different and each represents a hydrogen atom or a univalent organic group containing 1 to 20 carbon atoms; R^3 represents a univalent organic group containing 1 to 20 carbon atoms; M^+ represents an alkali metal ion or a quaternary ammonium ion.

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17. The polymer according to Claim 16

wherein the terminal halogen-containing group of a vinyl polymer having a halogen atom at a molecular chain terminus is represented by the general formula (3);

20 $-CR^{22}R^{23}X$ (3)

wherein R^{22} and R^{23} each represents a group linked to the ethylenically unsaturated group of the vinyl monomer; X represents a chlorine, a bromine or an iodine.

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18. The polymer according to any of Claim 1 to 15

which is obtainable by reacting a vinyl polymer having a hydroxyl group at a molecular chain terminus with a compound of the general formula (4);

30 $XC(O)CR^1=CR^2R^3$ (4)

wherein R^1 and R^2 are the same or different and each represents a hydrogen atom or a univalent organic group containing 1 to 20 carbon atoms; R^3 represents a univalent organic group containing 1 to 20 carbon atoms; X represents a chlorine, a bromine or a hydroxyl group.

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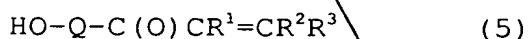
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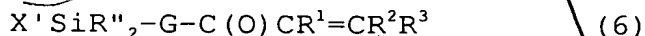
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19. The polymer according to any of Claims 1 to 15 which is obtainable by reacting a vinyl polymer having a hydroxyl group at a molecular chain terminus with a diisocyanate compound and then causing the residual unreacted isocyanato group to react with a compound of the general formula (5);



wherein R^1 and R^2 are the same or different and each represents a hydrogen atom or a univalent organic group containing 1 to 20 carbon atoms; R^3 represents a univalent organic group containing 1 to 20 carbon atoms; Q represents a bivalent organic group containing 2 to 20 carbon atoms.

20. The polymer according to any of Claims 1 to 15 which is obtainable by reacting a vinyl polymer (II) having a silanol group at at least one molecular chain terminus with a silicon compound of the general formula (6);



wherein R^1 and R^2 are the same or different and each represents a hydrogen atom or a univalent organic group containing 1 to 20 carbon atoms; R^3 represents a univalent organic group containing 1 to 20 carbon atoms; R'' represents a hydrocarbon group containing 1 to 14 carbon atoms or a halogenated hydrocarbon group containing 1 to 10 carbon atoms; the plurality of R'' may be the same or different; X' represents a hydrolyzable group; G represents an oxyalkylene group containing 1 to 4 carbon atoms.

21. The polymer according to Claim 20 wherein G in the general formula (6) is $-\text{CH}_2\text{O}-$, $-\text{CH}_2\text{CH}_2\text{O}-$, $-\text{CH}_2\text{CH}_2\text{CH}_2\text{O}-$ or $-\text{CH}_2\text{CH}(\text{CH}_3)\text{CH}_2\text{O}-$.

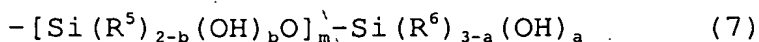
22. The polymer according to Claim 20 or 21 wherein the silanol group of the vinyl polymer (II) is

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represented by the general formula (7);



wherein R^5 and R^6 are the same or different and each represents an alkyl group containing 1 to 20 carbon atoms, an aryl group containing 6 to 20 carbon atoms, an aralkyl group containing 7 to 20 carbon atoms, or a triorganosiloxy group of the formula $(\text{R}')_3\text{Si}-$, where R' represents a univalent hydrocarbon group containing 1 to 20 carbon atoms and the three R' groups may be the same or different; when R^5 or R^6 occurs in the number of 2 or more, the plurality of groups may be the same or different; a represents 0, 1, 2 or 3; b represents 0, 1 or 2; m is an integer of 0 to 19; with the condition that the relation of $a + mb \geq 1$ is satisfied.

23. The polymer according to Claim 22 wherein m in the general formula (7) is equal to 0.

24. The polymer according to any of Claims 20 to 23 wherein the vinyl polymer (II) is obtainable by subjecting a vinyl polymer having at least one alkenyl group at a terminus to hydrosilylation reaction with a silicon compound having both a hydrolyzable group linked to a silicon atom and a hydrosilyl group

and then hydrolyzing the hydrolyzable group linked to the silicon atom for conversion to a silanol group.

25. The polymer according to Claim 24 wherein the silicon compound having both a hydrolyzable group linked to a silicon atom and a hydrosilyl group is chlorodimethylsilane.

26. A curable composition comprising the polymer according to any of Claims 1 to 25.

27. The curable composition according to Claim 26

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which comprises a photopolymerization initiator and is capable of curing on exposure to light or an electron beam.

- 5 28. The curable composition according to Claim 26 which comprises a thermal polymerization initiator and is capable of curing on heating.

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10 29. The curable composition according to any of Claims 26 to 28 comprising a monomer and/or oligomer having a radical-polymerizable group.

- 15 30. The curable composition according to Claim 29 wherein the radical-polymerizable group is an acrylic functional group.

- 20 31. The curable composition according to Claim 30 wherein the monomer and/or oligomer having said acrylic functional group has a number average molecular weight of not more than 2000.

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